

REMARKS

Claims 2-8, 64-65, 67-68 and 71-73 are pending. Claims 71-73 are new and are supported at least by previously presented claims 1, 63 and 66, which are cancelled herein. Claims 2-8 are therefore amended to depend from new claim 71, and claims 64-65 and 67-68 are amended to depend respectively from new claims 72 and 73. No new matter has been added.

Claim Rejections under 35 U.S.C. § 103

Claims 1-6, 8, 9, and 64-68 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Murata (U.S. Patent 5,423,915) in view of Patrick (U.S. Patent 5,474,648). Claim 7 stands rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Murata and Patrick in view of Stramke (U.S. Patent 4,645,981). Claim 63 stands rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Murata in view of Patrick and Hoke (U.S. Patent 5,077,875).

As a preliminary matter, the undersigned notes that the prosecution of this application has involved six substantive office actions, five substantive responses (not including the present response), and two requests for continued examination. The Examiner has raised an “intended field of use” argument numerous times regarding various claimed elements, and Applicants have traversed this argument in each response. Applicants respectfully maintain, as stated in paragraph [0054] of Applicants’ published application, that “[t]he radiofrequency electrical characteristics of each of the chambers of a plasma processing apparatus or a plasma processing system are defined by its shape, that is, by the mechanical dimensions.” The present application further teaches that the radiofrequency electrical characteristics (e.g., first series resonant frequency f_0) can be optimized by appropriately configuring the mechanical structure of the apparatus (e.g., paragraphs [0220], [0237]-[0243]).

However, independent claims 1, 63, and 66 have been rewritten in method claim format as claims 71, 72, and 73. Previously presented claims 1, 63, and 66 have been cancelled. Claims depending from cancelled claims 1, 63, and 66 have been amended to depend directly or indirectly from the new independent method claims.

In the Office Action dated June 4, 2007, the Examiner states that Murata does NOT teach:

a radio frequency which is three times a first series resonant frequency f_0 of the plasma processing chamber, is larger than a power frequency f_e of the radio frequency waves at the end of the radio frequency feeder, and wherein the first series resonant frequency f_0 is based on the measured impedance of the path from the radio frequency feeder to the ground via a shaft and a variable oscillation frequency when the plasma processing chamber is disconnected from the matching circuit, and the first series resonant frequency f_0 corresponds to a minimum impedance of the plasma processing chamber when the plasma chamber is disconnected from the plasma apparatus during a non-discharge period.

New claim 71 includes the above limitations, but has been rephrased for clarity. Also, new claim 71 recites modifying “the first series resonant frequency f_0 so that the first series resonant frequency f_0 measured at an end of the radio frequency feeder is larger than one-third of a power frequency f_e measured at the end of the radio frequency feeder.” This is merely a matter of rearranging the mathematical nomenclature, and the substance remains unchanged. In that regard, claim 1 as previously amended, essentially recited that “three times a first series resonant frequency f_0 of the plasma processing chamber, is larger than a power frequency f_e .” That is mathematically equal to the equation: $3f_0 > f_e$. The following equation is also mathematically equal to previous equation: $f_0 > f_e / 3$. New claim 71 recites the latter form of the equation for clarity. New claims 72 and 73 have been rephrased similarly to claim 71 and include additional limitations.

Each of the elements recited in the new method claims as part of the method steps provide limitations. Applicants submit that such claim limitations are not objectionable under “an intended field of use” analysis. The claimed elements of new claims 71-73 are not taught or suggested by Murata or Patrick individually or in combination. Further, the Examiner has stated that various elements of claim 1, which are also now recited in the new method claims, are not shown in Murata. Applicants submit that Patrick does not provide the missing elements to the Murata disclosure to arrive at Applicants’ claimed invention, thus new claim 71-73 and the claims depending therefrom are patentable over the cited references. Regarding claim 7, Applicants

reassert the above arguments and submits that the third cited reference to Stramke similarly does not provide any missing elements to the Murata disclosure or to the combined disclosure of Murata and Patrick to provide Applicants' claimed method.

SUMMARY

For at least the reasons given above, Applicants respectfully submit that the pending claims are allowable and request that a Notice of Allowance issue. The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application.

Respectfully submitted,

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